



4/Dec
Y. Campbell
9/5/03

PATENT
0505-0869P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Akio HANDA et al. Conf.: 1515
Serial No. 09/964,426 Art Unit: 3611
Filed: September 28, 2001 Examiner: A. Boehler
For: TWO/FOUR-WHEEL DRIVE SWITCHING DEVICE
FOR VEHICLE

RECEIVED

SEP 03 2003

GROUP 3600

DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 26, 2003

Sir:

I, **(Name/Title)** do declare and say as follows:

Bunzo SEKI,
Assitant Chief Engineer of Honda R&D Co. Ltd., Asaka Center,

1. (Experience and relation to the inventors)

I have been working for the field of the technology directly related to this invention since 1996, for about seven years, and now I work at the same department as one of the inventors, Akio HANDA.

2. I have studied the contents of the present application, the Office Action mailed

March 26, 2003, and all the related references, including Itoh et al. (U.S. 5,924,510).

3. To show the superiority of the present invention, I am submitting the following observations:

First of all, the device present invention is compared to a conventional device in the attached Figs. 2(a)-(d). Specifically, Figs. 2(a) and 2(b) represent longitudinal sectional

views of a principal portion according to the present invention, and Figs. 2(c) and (d) represent longitudinal sectional views of a principal portion of the conventional device. As can be clearly seen, the device of the present invention has an odd number (nine) of engaging/disengaging members 34, whereas the conventional device has an even number (eight) of engaging/disengaging members 34.

With the present invention, when the inner ring 40 and the outer ring 37 are connected together by the engaging/disengaging members 34, the inner ring 40 and the outer ring 37 are subject to centering. In other words, before the inner ring 40 and the outer ring 37 are connected, the inner ring 40 are likely to be slightly off-center with respect to the outer ring 37.

Since the engaging/disengaging members 34 are provided in an odd number (nine in this case), three engaging/disengaging members 34 (the three members designated by points of the triangle) come into abutment with both rings in an initial stage of the connection, as shown in Fig. 2(b), followed by successive abutment of the other engaging/disengaging members 34. In actuality, during this initial stage of the connection, when the inner ring 40 and the outer ring 37 are offset with respect to each other, one of the three engaging/disengaging members 34 (represented by one point of the triangle in Fig. 2(b)) comes into abutment with both rings. Abutment by this one engaging/disengaging member 34 then pushes the inner ring 40 away from the outer ring 37 toward a second one of the engaging/disengaging members 34, and then toward a third one of the

engaging/disengaging members 34 (represented by the other two points of the triangle). Once each of these three engaging/disengaging members 34 comes into abutment with both rings by a "one-two-three sequence" during this initial stage, centering is accomplished.

Therefore, the inner ring 40 and the outer ring 37 make contacted at three points, and the inner ring 40 and the outer ring 37 become centered with respect to each other. As can be seen in Fig. 2(b), during the initial stage of connection described above, centering of the inner ring with respect to the outer ring is accomplished by the "one-two-three sequence" when only three of the engagement/disengagement members 34 (shown by points of the triangle) come into abutment with both rings.

In contrast to the present invention, the conventional device is provided with an even number of engaging/disengaging members 34 as shown in Figs. 2(c) and (d). Again, prior to connection, the inner and outer rings 40, 37 are likely to be slightly off center with respect to each other. Therefore, during an initial stage of connection of the inner and outer rings 40, 37, one of the engaging/disengaging members 34 (represented by one point of the square in Fig. 2(d)) first makes contact. This contact then pushes the inner ring toward a second engaging/disengaging member 34 located at an opposite point of the square in Fig. 2(d). This action, is followed by successive contacts with the engaging/disengaging members 34 at a third and then a fourth point of the square in Fig. 2(d). In other words, centering of the inner and outer rings of conventional devices is accomplished by a "one-two-three-four sequence".

Thus it can be seen, that compared to the device of the present invention device with an odd number of engaging/disengaging members, centering of the inner and outer rings of a conventional device requires an additional step. Thus, the centering of the inner and outer rings of the conventional device takes a longer time, and results in the generation of additional noise. In view of the above, it can be readily understood that the device of the present invention, with an odd number of engaging/disengaging members, provides efficient centering of the inner and outer rings, and at the same time reduces the noise problem inherent in conventional devices having an even number of engaging/disengaging members.

4. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Aug. 20. 2003
Date

By Bunzo Seki
Bunzo SEKI